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EXTENSIVE USE OF WELDING IN ALL PHASES OF INDUSTRY

- COMMUNIST CHINA -

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EXTENSIVE USE OF WELDING IN ALL PHASES OF INDUSTRY

- COMMUNIST CHINA -

[Following is a translation of an unsigned article in the Chinese-language newspaper Kung-jen Jih-pao (The Workers' Daily), Peiping, 15 May 1960, page 2.]

Welding, a powerful metal finishing technology, has been widely used in all the industrial branches of this country. It has produced tremendous economical results.

The development of welding techniques since the great forward leap has been very rapid. It has crushed an old incorrect concept which asserted that welding is good only for repairing, but not for new products. Welding process is being widely used in the production of general and ordinary items, as well as large equipment and equipment requiring advanced technology (such as high temperature, high pressure, and items subjected to heavy vibration). This step is important in solving the problems of large-scale casting and forging equipment shortage, saving raw materials, and shortening time required for finishing process. For instance, the unfinished components made by the Harbin Generator Factory for the production of 3,000 kw water turbines employs welding process which saves about 20% of the raw materials as used in whole body casting and forging process, 30% labor, and 25% basic costs. Furthermore, the time of production is cut down from 3 months to only 1 month. In addition, the 10,000 ton class ocean-going cargo ship "Eastwind," which was designed and constructed by ourselves, employed many different new techniques including welding. The all-out people's movement and the large-scale technology revolution have saved us much metal and shortened the time in drydock to 49 days which is three months shorter than the construction of the Jalaness/ 10,000 ton class ocean-going cargo ship "Westwind," and this rate has paralleled the standard of international ship construction. Welding method has been successfully used to connect ordinary railroad rails into 500 or 1,000 meter lengths by many railroad administrations including Peking, Shanghai, etc. Since the welding process neglects the use of sandwich steel plates, bolts and nuts, 6 to 7 tons of steel have been saved for every kilometer of railroad constructed; moreover, it also greatly minimizes the damage to the rails, the vibration of the cars, and lengthens their life span. Welding process has been widely adopted in various structures by 9 different engineering fields including shipbuilding, boiler construction, heavy mechanical equipments and generator and electrical machinery. Furthermore, since mosaic welding makes structures free of the limitations imposed by

wooden forms, molds, forging process, and finishing process, large quantities of machinery can be produced in a relatively short period of time. Ninety percent of the equipment manufactured during the Shanghai City technical innovation and revolution movement used the welding method.

A layer of rub-resistant heat-resistant and corrosion-resistant alloy welded on steel may save a large quantity of valuable metal and improve the lifetime of the components. For instance, press-rolling butt welding may increase the life span of a structure by ten times, and cast steel plus pile-mold and butt welding procedure may lengthen the life by one to three times. The use of welding method to repair the worn parts of machinery and tools saves time as well as expense. Road tests prove that the degree of wear on automatically butt-welded cast-steel railroad car wheels is 75% lower than on whole-body cast steel wheels.

Following the development of welding technology and its wide application, the manufacture of welding apparatus has also been accelerated. At the present time, we can make more than 100 different types of welding machines and many of them have very high efficiency; these include multi-purpose electrical residual welding machine, multi-coil butt welding machine, double-coil automatic welding machine, and many other new type resistor welding machines. Since the opening of the "Four-way modernization" movement this year, many new high efficiency automatic and semi-automatic electrical welding machines with simple designs have been produced.

On the production of solders, we are producing good, low-carbon steel, large solders pieces as well as scores of different kinds of heat-resistant alloy steel, stainless steel, cast iron and cold metal bars. The different types of welding agents used by electrical residual welding and automatic welding can also be domestically manufactured.

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